

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-9. Canceled

10. (Currently Amended) A method for determining whether an agent is an agonist of ~~the a plasma membrane receptor of claim 1 ER-X~~, which comprises

a) contacting the plasma membrane receptor ER-X with the agent under conditions which permit (i) the formation of a complex between the plasma membrane receptor ER-X and a known agonist of the plasma membrane receptor ER-X, and (ii) the generation of a detectable signal upon formation of a the complex between the receptor and the known agonist; and

b) determining whether a the detectable signal is generated in step (a), wherein the generation of such detectable signal indicating that indicates the agent is an agonist of the plasma membrane receptor ER-X

wherein the plasma membrane receptor ER-X has a molecular weight of 62-63kDa and is obtainable by (i) contacting a neocortex tissue lysate from an estrogen receptor- α knockout mouse with a murine monoclonal antibody raised against estrogen receptor alpha (ER- α) designated 6F11 under conditions which permit the formation of a complex between the 6F11 antibody and ER-X; (ii) capturing the complex between the 6F11 antibody and ER-X with an anti-mouse IgG-coated polystyrene magnetizable bead; (iii) precipitating the complex; and (iv) separating ER-X from the complex based upon molecular size.

11. (Currently Amended) The method of claim 10, wherein the detectable

signal comprises an increase in ERK1/2 phosphorylation.

12. (Currently Amended) A method for determining whether an agent is an antagonist of ~~the a~~ plasma membrane receptor of claim 1 ER-X, which comprises

- a) contacting the plasma membrane receptor ER-X with the agent in the presence of a known agonist of the plasma membrane receptor ER-X under conditions which permit (i) the formation of a complex between the plasma membrane receptor ER-X and the known agonist in a concentration of at least 0.1pM and less than 100pM; and (ii) the generation of a detectable signal upon the formation of a complex between the receptor and the agonist; and
- b) comparing the detectable signal, if any, generated in step (a) with the detectable signal generated in the absence of the agent, wherein the generation of a detectable signal in the agent's absence being greater than that generated in the agent's presence indicating the detectable signal generated in step (a) indicates that the agent is an antagonist of the plasma membrane receptor ER-X
wherein the plasma membrane receptor ER-X has a molecular weight of 62-63kDa and is obtainable by (i) contacting a neocortex tissue lysate from an estrogen receptor- α knockout mouse with a murine monoclonal antibody raised against estrogen receptor alpha (ER- α) designated 6F11 under conditions which permit the formation of a complex between the 6F11 antibody and ER-X; (ii) capturing the complex between the 6F11 antibody and ER-X with an anti-mouse IgG-coated polystyrene magnetizable bead; (iii) precipitating the complex; and (iv) separating ER-X from the complex based upon molecular size.

13. (Currently Amended) The method of claim 12, wherein the detectable signal comprises an increase in ERK1/2 phosphorylation.

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42. (New) The method of claim 12, wherein the known agonist is 17 α -estradiol.